Seat No.: _____ Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII (NEW) EXAMINATION – WINTER 2017

Subject Code: 2172502 **Date: 02/11/2017**

Subject Name: Productivity Improvement Methods

Time: 10:30 AM TO 01:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

			MARKS
Q.1	**(a)**	Differentiate production and productivity in light of economic progress of India. Take an example of ship breaking industries.	**03**
	(b)	Discuss causes of low productivity and techniques to overcome them. Consider example of foundries in the region, with a special focus on labour productivity aspect.	**04**
	(c)	Define method study. Take an example of a manufacturing industry, and discuss economic, technical and human factors' consideration in selection of a job for study.	**07**
Q.2	**(a)**	Discuss importance of productivity measurement, and the role production engineers can play in it. Give example of machining industries.	**03**
	(b)	Discuss Outline process chart and its usefulness in factoring the overall operations involved in process. Draw an OPC for drilling 5 mm hole in a blank.	**04**
	(c)	What is a flow process chart? Classify flow process charts. Draw a material-type flow process chart for a job of first turning on a lathe and then drilling a 12 mm hole in this job. Show all symbols and imagine activity times and distance between machines/shops.	**07**
		OR	
	(c)	What is a man-machine chart? Discuss main purposes of constructing a man-machine chart. Construct a man-machine chart wherein you can demonstrate that one person can look-after work on two machines. Take any imaginary example.	**07**
Q.3	**(a)**	Write a brief note on construction of a SiMo chart.	**03**
	(b)	Discuss principles of motion economy while designing a work place layout.	**04**
	(c)	Discuss diagramming as a recording technique. Discuss construction of a string diagram for a waiter at a popular pizza joint.	**07**
		OR	
Q.3	**(a)**	Define and describe key Objectives of work measurement.	**03**
	(b)	Write a brief note on Therbligs and PMTS.	**04**
	(c)	Construct a time study observation sheet for 5 cycles of operation of drilling a 5 mm hole in a blank (assume the time), with following activities: • Loading the blank • Locating the work piece under the drill • Drilling • Unloading • Deburring	**07**

How can this be further taken up in determining the standard time for the drilling operation?

Q.4	**(a)**	Define ergonomics and enlist its principles.	**03**
	(b)	Discuss effect of environment on performance of worker, with suitable illustration.	**04**
	(c)	Write a brief note on Performance Rating, Wage Payment & Incentive Plans. Justify why a notion of 'standard worker' is followed while determining standard time.	**07**

OR

Q.4	**(a)**	Write a brief note on work sampling.	**03**
	(b)	Describe ergonomics in light of designing a Man-machine system interface. Take an example of ergonomic design for furniture for data entry operators.	**04**
	(c)	Discuss importance of understanding human behavior while designing equipment. Take an example of medical instrumentation and gadgets.	**07**
Q.5	**(a)**	Define and enlist advantages of BPR.	**03**
	(b)	Discuss situations that fails BPR exercise. Take any suitable example.	**04**
	(c)	Discuss implementation methodology of BPR. Take a suitable example.	**07**

OR

Q.5	**(a)**	Discuss why it is considered crucial to know as to 'when to reengineer'.	**03**
	(b)	Write a brief note on productivity scenario in public sector enterprises, and the changes that have come in recent years	**04**
	(c)	Discuss activities carried out by National Productivity Council, in advocating and counseling productivity improvement.	**07**

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